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At Work

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Testing and recertification keep Water Quality Lab ahead of government drinking water regulations

One of the main responsibilities of the Division of Water Quality is to make certain that Norfolk's residents receive the highest quality drinking water every time they turn on the faucet. The department's state-of-the-art laboratory has its roots in history, as chemical analyses have been run on Norfolk's water ever since Moores Bridges was just a pumping station back in 1873. Modern water quality analysis is a complicated job, made more critical with the passing of the Safe Drinking Water Act (SDWA) in 1974.

Through the years, Norfolk's Water Quality lab has stayed ahead of the government's increasingly stringent water quality standards through testing and planning for the future.

"We use both in-house chemists and contracted labs to cover our testing," said Vernon Land, Water Quality Manager. "The advantage of having staff chemists is the quick turnaround time and the ability to focus on our own samples as they pertain to the treatment process. Also, there is a significant cost benefit whenever staff chemists can do the analyses."

The lab must be certified by the Commonwealth of Virginia to test for each compound regulated by the SDWA. If the lab is not certified, the results will not be accepted by the government. In Virginia, the Department of Health has primacy with regards to SDWA regulations. This means the Department of Health enforces nearly all SDWA rules and regulations.

The Division of Water Quality is responsible for complying with all the following regulations:

- Total Coliform Rule (TCR)
- Disinfection/Disinfectants By-Products Rule (D/DBP)
- Long Term 1 Enhanced Surface Water Treatment Rule (LT1SWTR)
- Phase II/V Rule
- Lead and Copper Rule



Norfolk's Water Quality Chemists. Front row (lt. to rt.): Cef Hitchings, Maxine Burkett, Winnie Jaro. Back Row: Catherine Filipowski, Julie Gilliam, Bob Cox, Sheryll Bradford, Water Quality Manager Vernon Land.

- Unregulated Contaminants Monitoring Rule (UCMR)
- Consumer Confidence Report Rule (CCR)
- Radionuclide Rule
- Filter Backwash Recycling Rule (FBRR)
- Information Collection Rule (ICR)

And the list gets longer every few years.

Certifications for testing are not easy to acquire, and Norfolk's lab is certified to test for 33 different compounds found in treated drinking water. In order to be certified for each substance, the lab must complete a series of performance tests administered by a Virginia Department of Health-approved vendor. Each performance test is administered once a year and must be passed for the lab to remain certified for that compound.

One of the major concerns of the drinking water industry is disinfection byproducts (DBPs). These are substances created when chlorine reacts with naturally

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occurring organic matter in raw water. While there is uncertainty in estimating the risk to humans, some studies have shown several DBPs to be harmful to laboratory animals.

Norfolk's lab received its most recent certification for Haloacetic acids (HAA), a class of DBPs. The certification took nearly three years of effort to achieve.

"This certification is special," said Land, "because of the length of time it took us to get there and the difficulty of the test itself. This was also a particularly expensive analysis that we're glad to have in-house now."

HAAs and hundreds of other compounds are detected with a gas chromatograph, a complex instrument that is the workhorse of the modern organic laboratory.

Other tests run by the Water Quality Chemists can be less time-consuming, but are no less important. The lab runs about 56,000 tests a year, most of which are done in-house. All-in-all, 305 individual compounds are tested for in Norfolk's drinking water.

Norfolk's drinking water is continuously tested throughout the treatment process and at various locations throughout the city. After the treated water leaves the plant, our water chemists take samples at places like Norfolk 7-11 stores to ensure that high quality drinking water is supplied to the residents of Norfolk. Test results are published every year in the city's Water Quality Report. The results of quarterly water quality tests can also be accessed via the department's website or by contacting the Water Quality lab.

The 2003 Water Quality Report was mailed to all Norfolk homes and businesses around mid-June. The report lists

all substances found in Norfolk drinking water from January 2002-December 2002. It also tells customers how Norfolk's drinking water compares to United States Environmental Protection Agency (USEPA) Safe Drinking Water Act standards.

As in the past, Norfolk's drinking water met or exceeded all government standards for high quality drinking water. ♦



Water Chemist Maxine Burkett is certified for use of the gas chromatograph, which detects HAAs, as well as other regulated compounds.

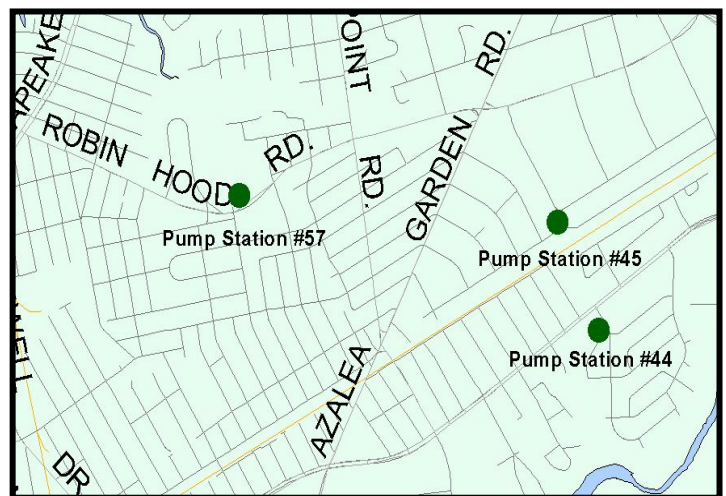
Utilities CIP Update

Estabrook Park, River Oaks, Lansdale Gardens sewer pump stations on schedule

In September 2002, construction began on the replacement of Pump Station 57 in Estabrook Park and renovations to Pump Stations 44 (River Oaks) and 45 (Lansdale Gardens). The construction is proceeding on schedule. Pump Station 57 is about 85% complete, and Pump Stations 44 and 45 are about 15% complete.

This \$1.2 million project is scheduled for completion in January 2004.

The replacement and rehabilitation of the pump stations will improve the sewer service in the three neighborhoods they serve.



The project will replace sewer pump station #57 and rehabilitate pump stations #44 and #45 for improved sewer service in Estabrook Park, River Oaks, and Lansdale Gardens.